

REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

Status of All of the Claims

Below is the status of the claims in this application.

1. Claim(s) pending: 1-9.
2. Claim(s) canceled: none.
3. Claim(s) added: none.
4. Claims withdrawn from consideration but not canceled: none.

Objections to Claims 1-9

Claims 1-9 have been objected to based on the inclusion of the phrase “or like material” in claim 1, and the later references in claims 5 and 6 to only the SMP layer. Applicant has deleted the term “or like material” from claim 1 and the objections to the claims are thereby overcome.

Rejections of Claims 1-9 Under §112

Claims 1-9 have been rejected under §112 for lack of enablement and for indefiniteness based on the inclusion of the phrase “or like material” in claim 1. Applicant has deleted the term “or like material” from claim 1 and the rejection of the claims under §112 are thereby overcome.

Rejections of Claims 1-9 Under §103

Claims 1-9 have been rejected under §103 as being unpatentable over Sinclair in view of Smith. Applicant submits, however, that the claims are not obvious over Sinclair, taken alone or in combination with Smith.

The present invention is directed to a method of providing a surface of a material with an image. The method includes applying to the surface an image sheet comprises of at least two

components – a flexible layer of SMP, and an image bonded to the SMP layer. The inventive method further includes bonding the image sheet to the surface by means of an adhesive. In addition, the inventive method includes bonding the image sheet to the surface by a process which involves heating the SMP to a temperature above its Glass Transition Temperature (“GTT”).

Thus, it is a part of the bonding process that “the image sheet is applied to the surface in a process which involves heating the SMP to a temperature above its glass transition temperature. The presence of the SMP in the image sheet allows the sheet to be applied to a surface with some degree of force, which “causes the SMP to adopt the texture of the surface to which it is being applied.” Then, lowering the SMP below its glass transition temperature “causes the texture to be retained in the SMP layer. Retention of the texture in the SMP layer is further enhanced by virtue of the fact that the SMP layer is bonded to the substrate by an adhesive”. The concept is that the Shape Memory Polymer is raised above its GTT and placed against the surface to have the SMP assume a new shape closely conforming to the surface to which it is to be attached. When the SMP is cooled to below its GTT, it retains the new shape conformed to the surface, and the adhesive helps to hold the SMP in position against the surface. The use of an SMP is therefore an important limitation of the invention.

The Smith reference is distinguishable from the present invention on several grounds. There is no disclosure in Smith indicating the use of a Shape Memory Polymer. The Office Action cites to the disclosure in Sinclair of “a vinyl plastic (column: 1, line: 40-50).” In view of the inclusion of the phrase “or like material”, the Action indicates that the examination is based on the view that vinyl plastic is a like material. Office Action, page 3, lines 1-3. However, given the deletion of this phrase from claim 1, and therefore from all claims, the rejection is

inapplicable to the claims as they presently stand. There is nothing in the cited art to indicate or suggest that vinyl plastic is a Shape Memory Polymer.

Sinclair is also cited as disclosing the “heating of the vinyl plastic layer to a temperature above its Glass Transition Temperature (column: 3, line: 1-20; see Claim: 1).” However, applicant submits that Sinclair does not disclose heating the vinyl plastic to above its GTT at the cited locations or elsewhere. At column 3, lines 1-20, the discussion has to do with either the printing ink (column 3, lines 1-7) or the laminating adhesive (column 3, lines 8-27). As to claim 1, there is no comment as to specific temperatures or to heating generally.

The Action further indicates that Sinclair teaches the “heating of the vinyl plastic layer from 175 degree F to 212 degree F gives the tacky characteristics.” However, the only reference to these temperatures appears at column 3, lines 8-13. But again, this disclosure relates to the laminating adhesive which is said to be preferably a polyester resin as used in the printing ink formulation. It is clear that this passage does not refer to either the polyvinyl fluoride film or the vinyl plastic substrate, as it is stated at column 3, lines 8-13 that the “slightly tacky” material is the polyester resin used to combine the polyvinyl fluoride film with the vinyl plastic.

Similarly, the contention that Sinclair teaches “a heat activated adhesive which is activated at a temperature 2-3 degree lower than the Glass Transition Temperature of the vinyl layer (column: 2, line: 55-75; column: 3, line: 10-20).” The text at column 2, lines 55-75 is not directed to the adhesive, but rather describes the printing ink. The disclosure at column 3, lines 10-20 does refer to the adhesive, but there is not reference to the Glass Transition Temperature of the vinyl layer at either cited location.

The present invention involves, inter alia, the bonding of the image sheet to a surface, in which the bonding involves both an adhesive and heating to a temperature above the GTT. The

Sinclair patent only describes laminating a polyvinyl fluoride film that is printed with ink and then laminated to a vinyl plastic substrate. There is no indication of the use of a Shape Memory Plastic in the process. There is no indication of heating an SMP to above its GTT as apart of the bonding process. Indeed, there is no disclosure that either the polyvinyl fluoride film or the vinyl plastic is an SMP, and there is no reference to a Glass Transition Temperature for either material.

The Smith patent is only “that to have the better adhering property, use vinyl plastic or leather material.” This is apparently directed to claim 3, which identifies one type of the material to be leather. Applicant submits that the combination of Smith with Sinclair does not render claim 3 or any of the claims obvious for the reasons set forth with respect to the Sinclair patent.

Conclusion

It should be understood that the above remarks are not intended to provide an exhaustive basis for patentability or concede the basis for the rejections in the Office Action, but are simply provided to overcome the rejections made in the Office Action in the most expedient fashion. In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early notice of allowance is earnestly solicited.

If after reviewing this amendment the Examiner feels that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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